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BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – M.Sc.(ANCS)-2022/M.Sc.(ANCS)-2023

Course Name – Switching Professional

Course Code - MNCS401

(Semester IV)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Identify the transmission medium that provides the highest transmission speed in a network.
 - a) Coaxial cable
 - b) Twisted pair cable
 - c) Optical fiber
 - d) Electrical cable
- (ii) Which sublayer of the data link layer can you select to perform data link functions that depend on the type of medium?
 - a) Logical link control sublayer
 - b) Media access control sublayer
 - c) Network interface control sublayer
 - d) Error control sublayer
- (iii) Determine the maximum number of access layer switches that can connect to a single distribution layer switch.
 - a) 1
 - b) 2
 - c) Limited only by the number of ports on the access layer switch
 - d) Limited only by the number of ports on the distribution layer switch
- (iv) Select the sublayer where the automatic repeat request error management mechanism is managed.
 - a) Logical link control sublayer
 - b) Media access control sublayer
 - c) Network interface control sublayer
 - d) Application access control sublayer
- (v) Select the network layer that is concerned with _____ of data.
 - a) Bits
 - b) Frames
 - c) Packets
 - d) Bytes
- (vi) Determine which of the followings can be merged into an access list.
 - a) CAM table
 - b) TCAM table
 - c) FIB table
 - d) ARP table
- (vii) Recognize where a switch performs in the event that the CAM table does not contain a MAC address.

- a) The frame is forwarded to the default port
c) The switch floods the frame out all ports (except the receiving port)
- (viii) Which of the followings determines Ethernet auto-negotiation?
a) Spanning-tree mode
c) Quality of service mode
- (ix) Choose the correct option - what happens to a port that is neither a root port nor a designated port.
a) It is available for normal use.
c) It is put into the Blocking state.
- (x) Choose the terminology that describes a subset of a network that includes all the routers but contains no loops.
a) spanning tree
c) spider tree
- (xi) Select the primarily usage of ICMP protocol.
a) error and diagnostic functions
c) forwarding
- (xii) Select the command that will configure a switch port to use the IEEE standard method of inserting VLAN membership information into Ethernet frames.
a) Switch(config)# switchport trunk encapsulation isl
c) Switch(config)# switchport trunk encapsulation dot1q
- (xiii) Select the commands you can use to enable STP Root Guard on a switch port.
a) spanning-tree root guard
c) spanning-tree guard root
- (xiv) Identify the protocol you can use to advertise a subnet to all the other devices in a topology.
a) EIGRP
c) DHCP
- (xv) If there are two MPLS labels in an MPLS label stack, identify the last label's BoS bit that is set to:
a) 24
c) 20
- b) The switch generates an ARP request for the address.
d) The switch drops the frame
- b) Duplex mode
d) MAC address learning
- b) It can be used for load balancing
d) It is disabled.
- b) spider structure
d) special tree
- b) addressing
d) routing
- b) Switch(config)# switchport trunk encapsulation ietf
d) Switch(config-if)# switchport trunk encapsulation dot1q
- b) spanning-tree root-guard
d) spanning-tree rootguard enable
- b) DRP
d) SVI

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Differentiate between TCP and UDP. (3)
3. Describe the significance of VLAN Trunking Protocol (VTP). (3)
4. Examine the roles of different VTP modes. (3)
5. Justify the benefits of using MPLS. (3)
6. Explain the importance of Cisco Discovery Protocol (CDP). (3)

OR

'The MAC sublayer plays a very important role in the OSI model' - Explain. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Write down the short notes on Bridge ID and Root Port. (5)

8. Evaluate the destination MAC address used by Bridge Protocol Data Units (BPDUs) in Spanning Tree Protocol (STP). (5)
9. Differentiate between Static VLAN and Dynamic VLAN. (5)
10. Discuss the different types of EtherChannel. (5)
11. Focus on the different types of passwords used in Cisco switches. (5)
12. Explain the states in the Spanning tree Protocol. (5)

OR

Explain the "Designated Port" concept of a switch in Spanning Tree Protocol (STP). (5)

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